

## *From*

Applicant: University of California  
Filed: Herewith  
Docket: 1133.010WO1  
Title: Bryostatins, Bryopyrans and Polyketides:  
Compositions and Methods

### COMPUTER READABLE FORM:

Medium Type: Diskette  
Computer: IBM compatible  
Operating System: WINDOWS 95  
Software: FastSEQ Version 4.0

Date Recorded: August 3, 2000

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1133.010WO1

INTERNATIONAL PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA et al.  
Serial No.: New Filing  
Filed: 04 August 2000 Docket: 1133.010WO1  
Title: BRYOSTATINS, BRYOPYRANS, POLYKETIDES:  
COMPOSITIONS AND METHODS

COMMUNICATION REGARDING SEQUENCE LISTING

BOX PCT  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

In accordance with Rule 1.821(e) and in compliance with WIPO Standard ST.23, submitted herewith is a copy of the SEQUENCE LISTING in computer readable form, as recited at pages 1- 80 of the above-identified international application also submitted herewith.

It is respectfully submitted that the contents of the paper version of the SEQUENCE LISTING recited at pages 1- 80 and the computer readable version of the same, both of which are submitted herewith, are identical. The enclosed SEQUENCE LISTING has been converted into the ASCII format using the Word(Perfect) conversion tool.


Please direct any inquiry to the below-signed attorney at (612) 373-6900.

Respectfully submitted,

SCHWEGMAN, LUNDBERG,  
WOESSNER & KLUTH  
P.O. Box 2938  
Minneapolis, Minnesota 55402  
(612) 373-6900

Date: 04 August 2000

By

  
Ann S. Viksnins  
Reg. No. 37,748

# SEQUENCE LISTING

<110> University of California

5<120> Bryostatins, Bryopyrans and Polyketides: Compositions  
and Methods

<130> 1133.010W01

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<150> 60/147,283

<151> 1999-08-04

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<160> 38

<170> PatentIn Ver. 2.1

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1133.010W01

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<213> Endobugula sertula

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 15 35 40 45  
 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys  
 50 55 60  
 20Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile  
 65 70 75 80  
 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg  
 85 90 95  
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 Ala Gly Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala His Leu Val  
 100 105 110  
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 Arg Gln Ser Asp Thr Tyr Lys Lys Tyr Ser Leu Ser Asp Thr Ala Pro  
 165 170 175  
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097593 04301  
 107570 8665260

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 180 185 190

Thr Lys Arg Val Ala Phe Val Val Lys Thr Thr Ile Glu Leu Met Glu  
 5 195 200 205

Lys Leu Asn Ala Phe Ile Glu Lys Gln Asn Thr Ile Lys Ala Ser Asn  
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Asn Glu Ser Thr Asp  
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 acgatcaact acgaagcacc caatcgggaa atcaattttg aacaatcacc ctttcatgtg 240  
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<213> Endobugula sertula

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FOR "BEBE"



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80

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100

<213> Endobuqula sertula

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<213> Endobuqula sertula

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5 35 40 45

Val Leu Leu Ser Leu Lys His Arg Gln Leu Val Ala Ser Leu His Phe  
50 55 60

10Asn Ser Ala Asn His His Phe Asp Phe Gln Gln Ser Pro Phe Tyr Val  
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                     20                      25                      30  
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 Asn Ile Ser His Leu Glu Ala Ala Gly Gly Ile Ser Gly Leu Ile Lys  
                     35                      40                      45  
 Ala Val Leu Ala Met Gln His Gly Val Ile Pro Gln Gln Leu His Cys  
 10           50                      55                      60  
 Lys Glu Pro Ser Pro His Ile Pro Trp Lys Arg Leu Pro Leu Asp Leu  
                     65                      70                      75                      80  
 15 Val Gln Glu Gln Thr Val Trp Pro Glu Ser Glu Glu Arg Ile Ala Ala  
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 Val Thr Ala Ser Asp  
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&lt;211&gt; 300

&lt;212&gt; DNA

25&lt;213&gt; Endobugula sertula

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5 20 25 30

His Ala Asn Ala Gly Ala Gly Ile Ala Gly Phe Ile Lys Thr Val Leu  
35 40 45

10Ser Leu Tyr His Gly Lys Ile Ala Pro Asn Ala Gly Asn Thr Glu Pro  
50 55 60

Asn Ala Ala Leu Asn Leu Asp Ala Phe His Phe Ala Leu Pro Lys Thr  
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cactgtcaca aattgaatcc gcttctggat atcgacggct tcaatgttgt gttccgcag 240  
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 20 25 30

Gly His Leu Glu Ala Thr Ala Gly Val Ala Ala Leu Ile Lys Ala Val  
 35 40 45

10

Leu Val Leu Gln His Gly Val Ala Pro Ala Asn Leu His Cys His Lys  
 50 55 60

Leu Asn Pro Leu Leu Asp Ile Asp Gly Phe Asn Val Val Phe Pro Gln  
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Ser Glu Thr Pro Leu His Ser Ser Leu Gln Leu Leu Gly Gly Tyr Gln  
 85 90 95

20Phe Val Arg Val Trp  
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25&lt;211&gt; 314

&lt;212&gt; DNA

&lt;213&gt; Endobugula sertula

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10Asn Ile Gly His Leu Thr Ala Ala Gly Val Ser Gly Val Val Lys Val  
35 40 45

Leu Leu Ala Leu Lys His Lys Gln Leu Pro Pro Ser Cys His Leu Val  
50 55 60

15 Lys Ile Asn Glu His Ile Asn Leu Glu Asp Ser Pro Phe Tyr Ile Asn  
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Ala Val Ser Ser Phe Gly Ser  
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5

10

15

Thr Gln Lys Lys Lys Tyr Cys Ala Ile Gly Ser Val Lys Ser Asn Ile

10

20

25

30

Gly His Ala Asp Thr Ala Ala Gly Val Ala Gly Leu Ile Lys Thr Val

35

40

45

15Met Ala Leu Lys Ala Arg Gln Ile Pro Pro Ser Leu His Phe Glu Thr

50

55

60

Pro Asn Pro Gln Ile Asp Phe Ala Asp Ser Pro Phe Tyr Val Asn Thr

65

70

75

80

20

Thr Leu Lys Asp Trp Asn Thr Asn Gly Val Pro Arg Arg Ala Gly Val

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Ser Ser Phe Gly Ile Gly

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&lt;213&gt; Endobugula sertula

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<222> (458)..(463)

<223> GATAAT may be a possible -10 trascription control  
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<222> (474)..(502)

<223> ATCAATAAAAA and TTTTATTGAT are inverted repeats

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<223> TGAGGAAT may be a possible SD sequence

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<222> (565)..(567)

<223> ATG encoding M is presumptive start of PKS Open

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30<223> GTG encoding V is is possible alternative start of  
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<212> DNA

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<222> (1)..(1954)

<223> N refers to any nucleotide

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<212> DNA

<213> Endobugula sertula

40<220>

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<222> (1)..(2672)

<223> N refers to any nucleotide

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<211> 2132

15<212> DNA

<213> Endobugula sertula

<220>

<221> misc\_feature

20<222> (1)..(2132)

<223> N refers to any nucleotide

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&lt;210&gt; 36

&lt;211&gt; 2169

&lt;212&gt; DNA

25&lt;213&gt; Endobugula sertula

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(2169)

30&lt;223&gt; N refers to any nucleotide

&lt;400&gt; 36

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685

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690

695

700

5

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705

710

715

720

Lys Ala Gln Ser Ala Leu Glu Gln Glu Val Tyr Gln Arg Phe Asn Ile

10

725

730

735

Asp Pro Ser Ser Ile Thr Leu Val Glu Ala His Gly Thr Gly Thr Lys

740

745

750

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755

760

765

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770

775

780

20

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795

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810

815

Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile Asn

820

825

830

30Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Ser Ile Pro Arg Arg Ala

835

840

845

Gly Val Ser Ser Phe Gly Phe Ser Gly Thr Asn Ala His Leu Val Leu

850

855

860

35

Glu Glu Tyr Leu Pro His Ser Thr Gly Thr Ile Glu Ser Phe Ala Ala

865

870

875

880

Asn His Ala Ser Thr Val Ile Ile Pro Leu Ser Ala Lys Ser His Asn

40

885

890

895

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	Ser	Leu	Tyr	Thr	Tyr	Ala	Gln	Thr	Leu	Leu	Ile	Phe	Leu	Lys	Arg	Ser		
	900							905						910				
	Gln	Val	Thr	Asp	Ala	Lys	Lys	Ile	Thr	Ile	Asp	His	Met	Glu	Cys	Arg		
5	915							920						925				
	Leu	Leu	Asp	Leu	Ala	Tyr	Thr	Leu	Gln	Val	Gly	Arg	Glu	Ala	Met	Asp		
	930							935						940				
10	Lys	Arg	Ile	Ser	Phe	Ile	Val	Asn	Thr	Lys	Gln	Ala	Leu	Val	Glu	Lys		
	945							950						955			960	
	Leu	Asn	Ala	Phe	Leu	Glu	Lys	Glu	Lys	Thr	Ile	Thr	Asp	Cys	Tyr	His		
15	965							970						975				
	Tyr	Leu	Phe	Asp	Ser	Asp	Lys	Pro	Ser	Thr	Glu	Ile	Phe	Arg	Leu	Asp		
	980							985						990				
	Glu	Asp	Asp	Lys	Val	Leu	Ile	Asn	Ser	Trp	Ile	Ser	Gln	Ser	Gln	Tyr		
20	995							1000						1005				
	His	Lys	Leu	Ala	Glu	Ala	Trp	Ser	Gln	Gly	Leu	Asp	Ile	Asp	Trp	Thr		
	1010							1015						1020				
25	Leu	Leu	Tyr	Thr	His	Ser	Ser	Thr	Pro	Arg	Arg	Ile	Ser	Leu	Pro	Thr		
	1025							1030						1035			1040	
	Tyr	Pro	Phe	Ala	Arg	Asp	Arg	Tyr	Trp	Leu	Pro	Glu	Lys	Pro	Arg	Tyr		
	1045							1050						1055				
30																		
	Asn	Ala	Ala	Asn	His	Pro	Val	Ser	Asn	His	Gln	Thr	Thr	Thr	Gln	Asn		
	1060							1065						1070				
	His	Ser	Arg	Phe	Ala	Ile	Asp	Thr	Asp	His	Asp	Val	Val	Ala	Glu	Ile		
35	1075							1080						1085				
	Met	Gln	Lys	Thr	His	Gln	Gln	Glu	Leu	Glu	Gln	Trp	Leu	Leu	Lys	Leu		
	1090							1095						1100				
40	Leu	Phe	Val	Gln	Leu	Gln	His	Met	Gly	Leu	Phe	Gln	His	Arg	Val	Phe		

1105                      1110                      1115                      1120  
 Glu Thr Ala Thr Ala Leu Arg Gln Ser Ala Gly Ile Val Asp Lys Tyr  
                          1125                      1130                      1135  
 5  
 Asp Arg Trp Trp His Glu Cys Leu Ser Val Leu Gln Asp Ala Gly Tyr  
                          1140                      1145                      1150  
 Leu Glu Trp Lys Asp Asp Ser Val Ala Ala Ala Gln Ala Leu Glu Ser  
 10                      1155                      1160                      1165  
 Glu Ser Gln Glu Ala Trp Trp Ser Arg Trp Asn Thr Glu Tyr Lys His  
                          1170                      1175                      1180  
 15 Tyr Gln Asn Asp Pro Glu Lys Lys Thr Leu Ala Ile Leu Ile Asn Asp  
                          1185                      1190                      1195                      1200  
 Cys Leu Gln Ala Leu Pro Gly Val Leu Ser Gly Glu Gln Leu Ile Thr  
                          1205                      1210                      1215  
 20  
 Asp Ile Ile Phe Pro Asn Gly Ser Met Glu Lys Met Glu Gly Leu Tyr  
                          1220                      1225                      1230  
 Lys Asn Asn Arg Ile Ala Asp Tyr Cys Asn Gln Cys Val Gly Asp Leu  
 25                      1235                      1240                      1245  
 Leu Val Gln Phe Ile Glu Ala Arg Leu Ser Arg Asp Ala Asn Ala Arg  
                          1250                      1255                      1260  
 30 Ile Arg Ile Ile Glu Ile Gly Ala Gly Thr Gly Gly Thr Thr Ala Ile  
                          1265                      1270                      1275                      1280  
 Val Leu Pro Met Leu Gln Ala Tyr Gln Asp His Ile Asp Thr Tyr Cys  
                          1285                      1290                      1295  
 35  
 Tyr Thr Asp Val Ser Lys Ala Phe Leu Met His Gly Gln Glu His Tyr  
                          1300                      1305                      1310  
 Gly Glu Gln Tyr Pro Tyr Leu Ser Tyr Cys Leu Cys Asn Ile Glu Gln  
 40                      1315                      1320                      1325

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Asp Leu Val Ala Gln Gly Ile Ser Val Gly Asp Tyr Asp Ile Ala Ile  
 1330 1335 1340

Ala Ala Asn Val Leu His Ala Thr Arg Asn Ile His Glu Thr Val Ser  
 51345 1350 1355 1360

His Val Arg Gln Ala Leu Ala Ala Asn Gly Leu Leu Ile Leu Asn Glu  
 1365 1370 1375

10Phe Ser Gln Lys Ser Val Phe Ser Ser Val Ile Phe Gly Leu Ile Asp  
 1380 1385 1390

Gly Trp Ala Leu Ser Glu Asp Thr Gly Leu Arg Ile Pro Gly Ser Pro  
 1395 1400 1405

15

Gly Leu Tyr Pro Lys Gln Trp Gln Ala Val Leu Glu Ala Ser Gly Phe  
 1410 1415 1420

Gly Asp Val Glu Phe Pro Leu His Asp Ala Arg Glu Leu Gly Gln Gln  
 201425 1430 1435 1440

Ile Ile Leu Ala Thr Asn Ala His Ala Asn Val Ala Ser Asp Leu Ala  
 1445 1450 1455

25Thr Ser Val Ile Asp His Ala Pro Lys Arg Leu Pro Ser Ala Glu Val  
 1460 1465 1470

Ser Met Asp Glu Arg Val Ser His Asp Ala Met Met Lys Ala Ser Val  
 1475 1480 1485

30

Lys Gln Leu Leu Val Glu Gln Leu Ser Gln Ser Leu Lys Leu Asp Met  
 1490 1495 1500

Asn Glu Ile His Pro Asp Glu Ser Phe Ala Asp Tyr Gly Val Asp Ser  
 351505 1510 1515 1520

Ile Thr Gly Ala Ser Phe Ile Gln Gln Leu Asn Asp Thr Leu Thr Leu  
 1525 1530 1535

40Thr Leu Lys Thr Val Cys Leu Phe Asp His Ser Ser Val Asn Arg Leu

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1540                      1545                      1550  
 Thr Ala Tyr Leu Leu Ser Asp Tyr Gly Asp Asp Ile Ala Gln Trp Leu  
 1555                      1560                      1565  
 5  
 Ala Thr Ala Pro Ala Leu Val Asp His Pro Gln Ser Val Val Ser Gln  
 1570                      1575                      1580  
 Val Leu Pro Glu Arg Ser Pro Ala Ser Thr Gln Ala Lys Pro Leu Pro  
 101585                      1590                      1595                      1600  
 Ser Val Pro Pro Ser Leu Ser Met Glu Ser Pro Val Gln Gln Glu Ser  
 1605                      1610                      1615  
 15Ile Ala Ile Ile Gly Met Ser Gly Arg Phe Ala Ala Ser Glu Asn Leu  
 1620                      1625                      1630  
 Glu Ala Phe Trp Gln Gln Leu Ala Gln Gly Val Asp Leu Val Glu Pro  
 1635                      1640                      1645  
 20  
 Ala Ser Arg Trp Gly Pro Gln Ala Glu Thr Tyr Tyr Gly Ser Phe Leu  
 1650                      1655                      1660  
 Lys Asp Met Asp Gln Phe Asp Pro Leu Phe Phe Asn Leu Ser Gly Val  
 251665                      1670                      1675                      1680  
 Glu Ala Ser Tyr Met Asp Pro Gln Gln Arg Cys Phe Leu Glu Glu Ser  
 1685                      1690                      1695  
 30Trp Asn Ala Leu Glu Asn Ala Gly Tyr Val Gly Asp Gly Ile Glu Gly  
 1700                      1705                      1710  
 Lys Arg Cys Gly Ile Tyr Ala Gly Cys Val Ser Gly Asp Tyr Ala Gln  
 1715                      1720                      1725  
 35  
 Leu Leu Gly Asp Gln Pro Pro Pro Gln Ala Phe Trp Gly Asn Ala Ser  
 1730                      1735                      1740  
 Ser Ile Ile Pro Ala Arg Ile Ala Tyr Tyr Leu Asn Leu Gln Gly Pro  
 401745                      1750                      1755                      1760

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 107555-010

Ala Thr Ala Val Asp Thr Ala Cys Ser Ser Ser Leu Val Ala Val His  
1765 1770 1775

Leu Ala Cys Gln Ala Leu His Leu Asp Glu Met Glu Met Ala Leu Ala  
5                   1780                   1785                   1790

Gly Gly Val Ser Leu Tyr Pro Thr Pro Ile Ile Val Glx Val Phe Ala  
1795 1800 1805

10Trp Cys Arg Tyr  
1810

[illegible]